

REMARKS/ARGUMENTS

The present application is a reissue application of U.S. Patent 6,001,614 which issued on December 14, 1999 from U.S. Patent Application 09/241,353. Claims 1-29 are currently pending including claims 1-23 in the patent and newly added claims 24-29. Claims 25, 28 and 29 have been amended in this response.

Claims 1-29 were rejected under 35 USC § 251 as being improper recapture. Claims 1-23 were amended during the prosecution of the '138 patent as identified in the Office Action. However Applicant disputes that the amendment to the oligonucleotide length claim element was made in order to distinguish from any prior art. In actual fact the art under consideration during the interview which preceded entry of the amendment, particularly U.S. Patent 5,888,731 to Yager, U.S. 5,403,708 to Brennan and U.S. 5,750,341 to Macevicz, did not specify numerical ranges for oligonucleotide length which the '138 patent needed to "amend around". Seen in this light the present reissue application is not believed to be an attempt to recapture subject matter surrendered because of a finding of unpatentability. Applicant fully believed at the time and continues to believe that the claims fairly cover embodiments in which an oligonucleotide can be literally outside the 2 to 10 base length range. This belief is reflected in a statement found in an amendment in the file of related U.S. Patent 5,998,175 styled "Second Supplemental Amendment Under 37 CFR §1.115"

"It is noted that the upper size of oligonucleotides claimed is 10 bases, the specification describes a size range of 2 to about 10. It is Applicant's position that the size difference between primer and oligonucleotide is more important. One of ordinary skill in the art will recognize the ability to make minor changes in the size of primers or oligonucleotides to be outside the precise size ranges stated in the claims without departing from the meaning of the claims as long as a significant size difference is maintained between primer and oligonucleotide."

The recollection of Applicant and his agent is that the numerical limit of 2 to 10 bases were assented to at the suggestion of the Examiner in the spirit of advancing prosecution and securing prompt acceptance of claims. The proposal of this numerical range was made by the Examiner by selecting language from the specification on page 8, lines 17-19. It would be just as appropriate and Applicant should also be entitled to use the larger range defined as from 2 to about 20 bases on page 25, line 14.

Claims 24-29 define a different concept in requiring "the length of each of the oligonucleotide 5'-monophosphates is relatively short in comparison to length of the primer". This concept was neither presented nor surrendered during prosecution of the '138 patent. An improper recapture finding is seen to be inapplicable with regard to these claims.

Claims 25, 28 and 29 were objected to because of informalities and are now amended to correct the identified informalities.

Claims 24-29 were rejected under 35 USC §112, 1st ¶ with respect to the phrase "wherein the length of each of the oligonucleotide 5'-monophosphates is relatively short in comparison to length of the primer". Claims 24-29 were also rejected under 35 USC §112, 2nd ¶ with respect to the same phrase as being indefinite in regard to what the oligonucleotide 5'-monophosphates are relatively short in comparison to. Applicant contends that interpretation of the meaning of this phrase is readily understood when read within the context of the specification. Page 8, lines 17-19 recite that oligonucleotides are usually from 2 to about 10 bases. Page 25. Line 14 recites that oligonucleotides can be from 2 to about 20 bases. It is also clearly established that the primer is to be hybridized to the template strand prior to ligation of the oligonucleotides but the oligonucleotides are not stably hybridized. Primers are defined on page 7, line 29 to page 8, line 1 as being usually from 15-30 bases. This definition is consistent with the art-recognized meaning of the term primer generally in use in molecular biology. Further, all worked examples demonstrate that the short oligonucleotides (pentamers) are significantly shorter relative to the primer. Taken together Applicant believes it is clear from these passages and the numerous worked examples that there is a significant size difference, in base length, between primers and the oligonucleotide 5'-monophosphates and that the relative difference expressed in claims 24 and 27 would be understood by one of ordinary skill in the art to refer to this relative difference. It

is this relative difference which permits the ability to stably hybridize the primer but not the oligonucleotide 5'-monophosphates. With this understanding Applicant believes and maintains that the claims are both enabled and not indefinite since the size of primer is specified and size difference must be sufficient to be able to differentially hybridize.

It is believed that the Claims as presented are allowable and that no new matter is introduced by way of this amendment. Notice of Allowance is respectfully requested.

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